

## CLAIMS

1. A process for producing a metal oxide catalyst represented by the following composition formula, which is characterized by allowing a fine particle of metallic tellurium as obtained by reducing a  $\text{Te}^{4+}$  compound or a  $\text{Te}^{6+}$  compound in the presence of a reductant and water or an organic solvent to react in the presence of an Mo compound, a V compound, a compound containing an A element and water and then drying and calcining

Composition formula:  $\text{MoV}_i\text{Te}_j\text{A}_k\text{O}_y$

(wherein A is at least one element selected from Nb, Ta, W, Ti, Zr, Re, Fe, Ni, Co, Sn, Tl, Cu, rare earth elements, and alkali metal elements.  $i$  and  $j$  are each from 0.01 to 1.5, and  $j/i$  is from 0.3 to 1.0;  $k$  is from 0.001 to 3.0; and  $y$  is the number to be determined by the oxidized state of other elements.)

2. A process for producing a metal oxide catalyst represented by the following composition formula, which is characterized by employing a process comprising the following step (1), step (2), step (3), step (4) and step (5):

Step (1): a step for reducing a  $\text{Te}^{4+}$  compound or a  $\text{Te}^{6+}$  compound in the presence of a reductant and water or an organic solvent to obtain a dispersion containing a

fine particle of metallic tellurium;

Step (2): a step for removing the unreacted reductant and organic solvent contained in said dispersion as obtained in said step (1) to obtain an aqueous dispersion containing a fine particle of metallic tellurium;

Step (3): a step for mixing the aqueous dispersion containing a fine particle of metallic tellurium as obtained in said step (2) with an  $\text{Mo}^{6+}$  compound and a  $\text{V}^{5+}$  compound and allowing the mixture to react at a temperature of  $40^{\circ}\text{C}$  or higher for one hour or more to obtain a reaction liquid;

Step (4): a step for mixing the reaction liquid as obtained in said step (3) with a compound containing the following A element to obtain a mixed liquid; and

Step (5): a step for evaporating to dryness the mixed liquid as obtained in said step (4), drying the resulting dried material and further calcining it

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3. The process for producing a metal oxide catalyst

according to any one of claims 1 to 2, wherein a primary particle of the metallic tellurium has a size of not more than 4.0  $\mu\text{m}$ .

4. A process for producing acrylic acid, which is characterized by subjecting propane to oxidation by vapor phase catalytic reaction in the presence of the metal oxide as produced by the process according to any one of claims 1 to 3.

5. A process for producing acrylonitrile, which is characterized by subjecting propane to ammoxidation in the presence of the metal oxide as produced by the process according to any one of claims 1 to 3.